(ii) Weak, stubby, or missing primary root with weak secondary or adventitious roots.

(5) Seedling:

(i) One or more essential structures impaired as a result of decay from primary infection. (A cotton seedling with yellowish areas on the root or hypocotyl is classified as normal, provided the cotyledons are free of infection.)

(ii) Albino.

[59 FR 64505 Dec. 14, 1994]

§ 201.56–10 Spurge family, Euphorbiaceae.

Kind of seed: Castorbean.

(a) General description.

(1) Germination habit: Epigeal dicot.

(2) Food reserves: Cotyledons, which are thin and leaf-like; endosperm (fleshy food-storage organs) usually persisting in the laboratory test.

(3) Shoot system: The hypocotyl lengthens, carrying the cotyledons, endosperm, and epicotyl above the soil surface.

(4) Root system: A primary root, with secondary roots usually developing within the test period.

(b) Abnormal seedling description.

(1) Cotyledons:

(i) Less than half of the original cotyledon tissue remaining attached.

(ii) Less than half of the original cotyledon tissue free of necrosis or decay.

(2) Endosperm:

(i) Missing.

(ii) [Reserved]

(3) Epicotyl:

(i) Missing.

(ii) Damaged or missing terminal bud.

(4) Hypocotyl:

(i) Deep open cracks extending into the conducting tissue.

(ii) Malformed, such as markedly shortened, curled, or thickened.

(5) Root:

(i) None.

(ii) Weak, stubby, or missing primary root with weak secondary or adventitious roots.

(6) Seedling:

(i) One or more essential structures impaired as a result of decay from primary infection.

(ii) Albino.

[59 FR 64505 Dec. 14, 1994]

§ 201.56–11 Knotweed family, Polygonaceae.

Kinds of seed: Buckwheat, rhubarb, and sorrel.

(a) General description.

(1) Germination habit: Epigeal dicot.

(2) Food reserves: Cotyledons, starchy endosperm.

(3) Shoot system: The hypocotyl elongates carrying the cotyledons above the soil surface. The epicotyl usually does not show any development within the test period.

(4) Root system: A primary root, with secondary roots developing within the test period for some kinds.

(b) Abnormal seedling description.

(1) Cotyledons:

(i) Less than half of the original cotyledon tissue remaining attached.

(ii) Less than half of the original cotyledon tissue free of necrosis or decay.

(2) Epicotyl:

(i) Missing. (May be assumed to be present if cotyledons are intact.)

(ii) [Reserved]

(3) Hypocotyl:

(i) Deep open cracks or grainy lesions extending into the conducting tissue.

(ii) Malformed, such as markedly shortened, curled, or thickened.

(iii) Watery.

(4) Root:

(i) None.

(ii) Weak, stubby, or missing primary root with weak secondary or adventitious roots.

(5) Seedling:

(i) One or more essential structures impaired as a result of decay from primary infection.

(ii) Albino.

[59 FR 64506, Dec. 14, 1994]

§ 201.56–12 Miscellaneous plant families.

Kinds of seed by family:

Carrot family, Apiaceae (Umbelliferae)—carrot, celery, celeriac, dill, parsley, parsnip;

Hemp family, Cannabaceae—hemp;

Dichondra family, Dichondraceae—dichondra;

Geranium family, Geraniaceae—alfilaria;

Mint family, Lamiaceae (Labiatae)—sage, summer savory; benne family, Pedaliaceae—sesame;

Rose family, Rosaceae—little burnet;

Nightshade family, Solanaceae—eggplant, tomato, husk tomato, pepper, tobacco; and

Valerian family, Valerianaceae—cornsalad.

(a) General description.

(1) Germination habit: Epigeal dicot.

(2) Food reserves: Cotyledons; endosperm may or may not be present, depending on the kind.

(3) Shoot system: The hypocotyl elongates, carrying the cotyledons above the soil surface. The epicotyl usually does not show any development within the test period.

(4) Root system: A primary root; secondary roots may or may not develop within the test period, depending on the kind.

(b) Abnormal seedling description.

(1) Cotyledons:

(i) Less than half of the original cotyledon tissue remaining attached.

(ii) Less than half of the original cotyledon tissue free of necrosis or decay.

(2) Epicotyl:

(i) Missing. (May be assumed to be present if the cotyledons are intact.)

(ii) [Reserved]

(3) Hypocotyl:

(i) Malformed, such as markedly shortened, curled, or thickened.

(ii) Deep open cracks extending into the conducting tissue.

(iii) Watery.

(4) Root:

(i) None.

(ii) Missing or stubby primary root with weak secondary or adventitious roots.

(5) Seedling:

(i) One or more essential structures impaired as a result of decay from primary infection.

(ii) Albino.

[59 FR 64506, Dec. 14, 1994]

§ 201.57 Hard seeds.

Seeds which remain hard at the end of the prescribed test because they have not absorbed water, due to an impermeable seed coat, are to be counted as ''hard seed.'' If at the end of the germination period provided for legumes, okra, cotton and dichondra in these rules and regulations there are still present swollen seeds or seeds of these kinds which have just started to germinate, all seeds or seedlings except the above-stated shall be removed and the test continued for 5 additional days and the normal seedlings included in the percentage of germination. For flatpea, continue the swollen seed in test for 14 days when germinating at 15–25 °C or for 10 days when germinating at 20 °C.

[5 FR 33, Jan. 4, 1940, as amended at 10 FR 9952, Aug. 11, 1945; 20 FR 7936, Oct. 21, 1955; 65 FR 1708, Jan. 11, 2000]

§ 201.57a Dormant seeds.

Dormant seeds are viable seeds, other than hard seeds, which fail to germinate when provided the specified germination conditions for the kind of seed in question.

(a) Viability of ungerminated seeds shall be determined by any of the following methods or combinations of methods: a cutting test, tetrazolium test, scarification, or application of germination promoting chemicals.

(b) The percentage of dormant seed, if present, shall be determined in addition to the percentage of germination for the following kinds: Bahiagrass, basin wildrye, big bluestem, little bluestem, sand bluestem, yellow bluestem, bottlebrush-squirreltail, buffalograss, buffelgrass, galletagrass, forage kochia, blue grama, side-oats grama, Indian ricegrass, johnsongrass, sand lovegrass, weeping lovegrass, mountain rye, sand dropseed, smilo, switchgrass, veldtgrass, western wheatgrass, and yellow indiangrass.

(c) For green needlegrass, if the test result of method 2 is less than the result of method 1, subtract the result of method 2 from method 1 and report the difference as the percentage of dormant seed. Refer to § 201.58(b)(7).

[46 FR 53638, Oct. 29, 1981, as amended at 59 FR 64506, Dec. 14. 1994]

§ 201.58 Substrata, temperature, duration of test, and certain other specific directions for testing for germination and hard seed.

Specific germination requirements are set forth in table 2 to which the following paragraphs (a), (b), and (c) are applicable.

(a) *Definitions and explainations applicable to table 2*—(1) *Duration of tests.* The following deviations are permitted from the specified duration of tests: